

## CLAIMS

What is claimed is:

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5 1. A method comprising:

registering an attribute to a distributed dictionary for a plurality of nodes in a network having an unknown topology, said attribute comprising a key to index the attribute, a value associated with the key, and an incarnation identifier for the value.

10 2. The method of claim 1 wherein registering the attribute comprises:

obtaining the value associated with the key;

determining the incarnation identifier for the value; and

combining the key, the value, and the incarnation number into the attribute.

15 3. The method of claim 1 wherein registering the attribute comprises:

multicasting the attribute to the plurality of nodes in the network.

20 4. The method of claim 1 further comprising:

registering a modified attribute to the distributed dictionary, the modified attribute comprising the key, a modified value, and a new incarnation identifier.

5. The method of claim 4 wherein registering the modified attribute comprises:

obtaining the modified value associated the key;

determining the new incarnation identifier for the modified value;

combining the key, the modified value, and the new incarnation identifier into the modified attribute; and

multicasting the modified attribute to the distributed dictionary.

5 6. The method of claim 1 wherein registering the attribute comprises:

receiving the attribute in a multicast from a reporting node at one of the plurality of nodes; and

storing the attribute to local memory based at least in part on the key.

10 7. The method of claim 6, wherein the attribute comprises a first attribute, and wherein storing the attribute comprises:

identifying a second attribute stored in the local memory having the same key;

comparing the incarnation identifier of the first attribute to an incarnation

identifier of the second attribute; and

15 maintaining a newer attribute of the first and second attributes having a most current incarnation identifier.

8. The method of claim 7 further comprising:

deregistering an older attribute of the first and second attributes having an older

20 incarnation identifier.

9. The method of claim 8 wherein deregistering comprises at least one of:

over-writing the older attribute in the local memory with the newer attribute value;  
and  
storing the older attribute value until the older attribute value expires.

5 10. The method of claim 7 wherein maintaining the new attribute comprises presenting the new attribute to an application of the one of the plurality of nodes.

11. The method of claim 1 wherein the distributed dictionary comprises equivalent sets of registered attributes stored locally at each node of the plurality of nodes.

10 12. The method of claim 1 wherein the network comprises at least one of a local area network (LAN) and a switch stack.

15 13. The method of claim 1 wherein the plurality of nodes comprise a plurality of switches comprising a switch stack.

14. The method of claim 1 wherein registering the attribute utilizes a multicast protocol.

20 15. The method of claim 14 wherein the multicast protocol comprises a generic attribute registration protocol (GARP).

16. An article comprising:

a machine readable storage medium having stored thereon executable instructions to implement registering an attribute to a distributed dictionary for a plurality of nodes in a network having an unknown topology, said attribute comprising a key to index the attribute, a value associated with the key, and an incarnation identifier for the value.

17. The article of claim 16 wherein registering the attribute comprises:

obtaining the value associated with the key;  
determining the incarnation identifier for the value; and  
combining the key, the value, and the incarnation number into the attribute.

18. The article of claim 16 wherein registering the attribute comprises:

receiving the attribute in a multicast from a reporting node at one of the plurality of nodes; and  
storing the attribute to local memory based at least in part on the key.

19. An apparatus comprising:

a processor; and

a machine readable storage medium coupled to said processor, said machine readable medium having stored thereon executable instructions that when executed by the processor implement registering an attribute to a distributed dictionary for a plurality of nodes in a network having an unknown topology, said attribute comprising a key to index the attribute, a value associated with the key, and an incarnation identifier for the value.

20. The apparatus of claim 19 wherein registering the attribute comprises:

obtaining the value associated with the key;

determining the incarnation identifier for the value; and

combining the key, the value, and the incarnation number into the attribute.

21. The apparatus of claim 19 wherein registering the attribute comprises:

receiving the attribute in a multicast from a reporting node at one of the plurality of nodes; and

storing the attribute to local memory based at least in part on the key.